

Book Review

Germplasm Exchange and Quarantine of ICRISAT Mandate Crops

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The information bulletin, jointly published by NBPGR Regional Station, Hyderabad and ICRISAT, is a symbol of the perfect partnership between the two institutes in ensuring compliance to phytosanitary standards during exchange of germplasm of ICRISAT mandate crops. It has been brought out as the culmination of a milestone in the ICRISAT-ICAR partnership. It covers the plant quarantine procedures and protocols followed; pests, diseases and weeds of quarantine importance and the legislative restrictions imposed by different countries. It also traces the details of ICRISAT germplasm import and export from 1974 till 2004 giving details of detection and salvaging procedures adopted, post-entry quarantine inspection, and interceptions made during the span of 30 years. The book makes a good attempt to provide information on all key aspects of plant quarantine while keeping in view the dynamic global scenario of regulations for efficient exchange of precious genetic resources. Although the focus of the book is mainly on export related quarantine aspects, it also gives an insight into the regulatory requirements of different countries for import which have been analyzed and presented systematically. The information presented is amply supported by a number of illustrations, flowcharts and tables for easy and holistic comprehension of the reader. A glossary of technical terms could have provided a reader with better understanding, although the lack of which in no way reduces the quality of the presentation. This bulletin would be highly useful to researchers, plant protection workers and quarantine personnel especially those involved in germplasm exchange both at national as well as international levels.

- Kavita Gupta

Peeping into the Past – Pioneers in Plant Protection



Leslie C Coleman (1878-1954)

Leslie C Coleman was born in a village in Ontario, Canada on June 16, 1878. He attended a village primary and secondary school and worked during holidays on surrounding farms. After graduating from high school at the age of 18, he worked as a teacher in a primary school for four years. In 1900, at the age of 22, he decided to continue his studies and became a student at Toronto University. In 1904 he graduated first with first class honors, winning the Governor General's Gold medal, the highest university award in science at the time. He then obtained a doctoral degree at the University in Gottington, Germany. In 1906 he worked as a guest investigator at the Kaiser Wilhelm Institute for Agriculture and Forestry in Berlin-Dahlem. In January 1908, Coleman accepted the appointment of Mycologist and Entomologist at the Mysore Government in India for a five year term. A few months later he became head of the Mysore Agricultural Chemist's Department at Hebbal, Bangalore, that included Plant Pathology and Entomology. He devoted his time mainly to study plant diseases and pests of crops in Karnataka. In 1913, Coleman became Director of Agriculture of Mysore State (presently the state of Karnataka), a position he held till his retirement in 1934.

During the 26 years, when Coleman headed the Department of Agriculture in Mysore, his pioneering work on plant protection, agricultural education, research and extension was aimed at improving the yields of major crops in the region. He saved the coffee industry by successfully fighting leaf rust caused by *Hemileia vastatrix*, and black rot caused by *Corticium koleroga*. He started biological control of the weed *Lantana camara*, by introducing agromyzid flies from Hawaii.

Control of 'koleroga' disease of arecanut, caused by *Phytophthora arecae* with large scale spraying of Bordeaux mixture was the most important contribution of Coleman. Diseases of pepper, cardamom, coffee, potato and coconut palms were also studied by Coleman but perhaps the most

interesting study was his classic work on sandal spike, published in 1917 (Coleman, L.C. 1917. Spike disease of sandal. Bull. Dep. Agric. Mysore Mycol. Soc. 3: 1-152). He found that *Zizyphus oenoplia*, *Lantana camara*, and numerous other host plants of the parasitic *Santalum album* plant can act as alternate hosts of the sandal spike pathogen, believed to be a virus since Butler's time (see Jonston, A. 1992. Butler – Sir Edwin J. Butler, 1874-1943. *Review of Tropical Plant Pathology* 7:1-23.) Only in 1969, fifteen years after Coleman's death, was the phytoplasma etiology of sandal spike disease documented, but the description of suspected alternate hosts, provided by Coleman in 1917, has remained valid until now. Coleman was the first who demonstrated that sandal spike is easily transmitted by grafting and by dodder, *Cuscuta* sp. (Raychaudhuri, S. P. 1996. Sandal spike-retrospect and prospect. In: *Forest Trees and Palms: Diseases and Control*. S. P. Raychaudhuri and K. Maramorosch, eds. Science Publishers, Lebanon, NH, USA: 199-213). Neither the presumed leafhopper vector of the causative phytoplasma of sandal spike disease nor the proper classification of the phytoplasma has been determined as of this writing. The phytoplasma has not yet been studied by PCR and amplification of phytoplasmal DNA in nested polymerase chain reaction (PCR), nor by phytoplasma-universal and group-specific oligonucleotide pairs. When restriction fragment length polymorphism (RFLP) analysis of the nucleotide sequence of 16 Sr DNA from other already identified phytoplasmas will be performed, it will permit the proper diagnosis and the classification of the sandal spike phytoplasma.

In addition to the basic and applied research on plant diseases and pests, Coleman selected resistant strains of various plantation crops and initiated large scale spraying practices. In 1925 he established the coffee experiment station, which later became India's Central Coffee Research Institute. From 1931 till 1934 he worked on the creation of the Mysore Sugar Factory at Mandya. His plant breeding resulted in the development of the high-yielding finger millet (ragi) variety H-22. The Hebbal farm owes Dr. Coleman its modern development. The Journal of the Mysore Agricultural Experimental Union, now known as the *Mysore Journal of Agricultural Sciences*, has been started by him.

Following his retirement in 1934, Coleman returned to his native Canada and worked there the following 15 years as Professor of Botany at Toronto University. In addition to teaching, he continued his research, primarily in cytogenetics. In 1949, at the age of 71, he retired again and moved to Victoria, British Columbia.

In 1954, he revisited Karnataka, to find out how the research work, initiated by him decades earlier, had progressed. The

local government proclaimed him a "State Guest" and paid his entire expenses during his travel in the state. He was warmly received by farmers and scientists in more than 80 localities that were revisited. Following this trip, Dr. Coleman submitted a 70 page report, with detailed descriptions and suggestions for further agricultural developments in Karnataka. He hoped to return again ten years later and expressed his own feelings by stating that Canada was his first, and Kannada speaking Karnataka as second home. Unfortunately, six months after his return to Canada he was killed in a car accident, while en route to the research laboratories at Saanichton, British Columbia.

In 1981, a new International Journal of Entomology was created in Bangalore, India, named *Colemania* in honor of the late Dr. Leslie C. Coleman. His name has also been immortalized by naming a new monotypic genus of an endemic Indian grasshopper pest of sorghum, *Colemania sphinatrioides* (known under the local name Deccan or Jola grasshopper). The following is quoted nearly verbatim from the life sketch that appeared in the first issue of *Colemania* in 1981. (Anonymous. Life Sketch. *Colemania* 1:60-62) "Coleman was a great worker and leader, never losing sight of the farmer, whether his eyes were on a microscope slide or on the piles of ribboned files heaped on his desk, or his mind occupied with committees or building plans. His personal philosophy was that a man should use his talents in the services of his fellow-men rather than in the satisfaction of his personal interests. There is no doubt that he transmitted that conviction into action, to the lasting good of agriculture in Karnataka, for which the farmers and agricultural scientists will never cease to be grateful."

- Karl Maramorosch

(Photograph courtesy: Prof H C Govindaraj)



Lindsay M Black (1907-1997)

Lindsay M Black was born in Edinburgh, Scotland on April 20, 1907. In 1914, when he was 7 years old, he emigrated with his parents to Calgary, Alberta, Canada. In 1929 he received his BSA degree from the University of British Columbia. In that year he published his first paper, "A new and striking